

What is claimed is:

1. A stent having first and second ends with an intermediate section therebetween, the stent further having a longitudinal axis and providing axial flexibility, comprising:

5 a plurality of longitudinally disposed bands, wherein each band defines a generally continuous wave having a spatial frequency along a line segment parallel to the longitudinal axis; and

a plurality of links for maintaining the bands in a tubular structure.

10 2. A stent according to claim 1, wherein each band is connected, at a plurality of periodic locations, by a short circumferential link to an adjacent band.

3. A stent according to claim 1, wherein the wave associated with each of the bands has approximately the same fundamental spatial frequency for the intermediate section.

15 4. A stent according to claim 3, wherein the bands are so disposed that the waves associated with them are spatially aligned so as to be generally in phase with one another.

20 5. A stent according to claim 4, wherein the spatially aligned bands are connected, at a plurality of periodic locations, by a short circumferential link to an adjacent band.

6. A stent according to claim 5, wherein, at each one of a first group of common axial positions, there is a circumferential link between each of a first set of adjacent pairs of bands.

25 7. A stent according to claim 5, wherein, at each one of a second group of common axial positions, there is a circumferential link between each of a second set of adjacent rows of bands, wherein, along the longitudinal axis, a common axial position occurs alternately in the first group and in the second group, and the first and second sets are selected so that a given band is linked to a neighboring band at only one of the first and second groups of common axial
30 positions.

8. A stent according to claim 2, wherein the spatial frequency of the wave associated with each of the bands, is decreased in a first end region lying proximate to the first end and in a second end region lying proximate to the second end, in comparison to the spatial frequency of the wave in the intermediate section.

9. A stent according to claim 8, wherein the spatial frequency is decreased by about 20 % compared with the spatial frequency of the wave in the intermediate section.

10. A stent according to claim 8, wherein the first end region lies between the first end and a set of circumferential links lying closest to the first end and the second end region lies between the second end and a set of circumferential links lying closest to the second end.

11. A stent according to claim 8, wherein widths of corresponding sections of the bands, measured in a circumferential direction, are greater in the first and second end regions than in the intermediate section.

12. A stent according to claim 10, wherein widths of corresponding sections of the bands, measured in a circumferential direction, are greater in the first and second end regions than in the intermediate section.

13. A stent according to claim 1, wherein each band includes a terminus at each of the first and second ends and the adjacent pairs of bands are joined at their termini to form a closed loop.

14. A stent according to claim 8, wherein each band includes a terminus at each of the first and second ends and the adjacent pairs of bands are joined at their termini to form a closed loop.

15. A stent according to claim 9, wherein the first end region lies between the first end and a set of circumferential links lying closest to the first end and the second end region lies between the second end and a set of circumferential links lying closest to the second end.

5 16. A stent according to claim 15, wherein widths of corresponding sections of the bands, measured in a circumferential direction, are greater in the first and second end

10 17. A stent according to claim 7, wherein the spatial frequency of the wave associated with each of the bands, is decreased in a first end region lying proximate to the first end and a second end region lying proximate to the second end, in comparison to the spatial frequency of the wave in the intermediate section.

18. A stent having first and second ends with an intermediate section therebetween, the stent further having a longitudinal axis and providing axial flexibility, comprising:

15 a plurality of longitudinally disposed bands, wherein each band defines a generally continuous wave having a spatial frequency along a line segment parallel to the longitudinal axis; the spatial frequency of the wave associated with each of the bands being decreased in a first end region lying proximate to the first end and in a second end region lying proximate to the second end, in comparison to the spatial frequency of the wave in the intermediate section;
20 and

a plurality of links for maintaining the bands in a tubular structure.

25 19. A stent according to claim 18, wherein widths of sections of the bands, measured in a circumferential direction, are greater in the first and second end regions than in the intermediate section.